

WHAT IS CLAIMED IS:-

1. An image display device for receiving an input image data comprising three or more color data, and displaying the input image data on an image display unit, comprising:

a color converter for converting a first image data comprising three or more color data, into a second image data comprising three or more color data, on the basis of conversion characteristics data;

a conversion characteristics storage for storing the conversion characteristics data;

conversion characteristics designation means for designating conversion characteristics to be used by the color converter, and outputting conversion characteristics designation data; and

conversion characteristics setting means for calculating the conversion characteristics data on the basis of the conversion characteristics designation data, and setting the conversion characteristics data in the conversion characteristics storage;

wherein

said conversion characteristics designation means comprises:

chroma designation means for designating the chroma of the color represented by the second image data comprising three or more colors;

said color converter comprises:

a calculation term generator for receiving the first image data, and outputting calculation terms which are effective just for the specific hues; and

a matrix calculator for calculating the second image data, said matrix calculator performing calculation including matrix calculation using said calculation terms effective just for the specific hues.

2. The image display device as set forth in claim 1, wherein

said conversion characteristics data includes matrix calculation coefficients used in said matrix calculator; and

said conversion characteristics setting means calculates the conversion characteristics data by adding or subtracting the values corresponding to the values of the conversion characteristics designation data to or from the coefficients among the coefficients for the calculation terms effective just for the specific hues.

3. The image display device according to claim 1, wherein said chroma designation means designates the chroma of the colors represented by the second image data, by designating its ratio to the chroma of the colors represented by the first image data.

4. The image display device as set forth in claim 1, wherein said first image data include three color data of red, green and blue.

5. The image display device as set forth in claim 4, wherein the chroma designation means comprises:

means for selecting the color for which the chroma is designated; and

means for designating the chroma for the selected color.

6. The image display device as set forth in claim 5, wherein said colors for which the chroma is designated includes three colors of red, green and blue.

7. The image display device as set forth in claim 5,

wherein said colors for which the chroma is designated includes six colors of red, green, blue, yellow, magenta and cyan.

8. The image display device as set forth in claim 5, wherein said conversion characteristics designation data include

information indicating the color that has been selected by the chroma designation means; and

information indicating the chroma designated for the selected color.

9. The image display device as set forth in claim 4, wherein said calculation term generator comprises:

color extracting means for extracting chromatic and achromatic components from the first image data; and

a polynomial calculator performing comparison operation on the chromatic components.

10. The image display device as set forth in claim 9, wherein

said color extracting means comprises:

a minimum and maximum calculator for calculating a minimum value α and a maximum value β of said first image data; and

a hue data calculator for calculating hue data r, g, b, y, m and c based on said first image data, and said minimum and maximum values α and β outputted from said minimum and maximum calculator;

said polynomial calculator comprises:

means for generating first comparison-result data based on the hue data (r, g, b, y, m, c) outputted from said hue data calculator; and

means for generating second comparison-result data

based on said first comparison-result data; and

said matrix calculator is responsive to said hue data, said first comparison-result data, said second comparison-result data, and said minimum value, and performs said matrix calculation using at least said first comparison-result data, said second comparison-result data, and said hue data, and in accordance with the conversion characteristics data from the conversion characteristics storage.

11. The image display device as set forth in claim 10, wherein

said first image data include three color data of red, green and blue,

said minimum and maximum calculator determines the minimum and maximum of the three color data R, G and B;

said hue data calculator calculates the hue data r, g, b, y, m, c by subtraction in accordance with:

$$r = R - \alpha,$$

$$g = G - \alpha,$$

$$b = B - \alpha.$$

$$y = \beta - B,$$

$$m = \beta - G, \text{ and}$$

$$c = \beta - R;$$

said first comparison-result generator generate the first comparison-result data between the hue data r, g, b and y, m, c;

said second comparison-result generator comprises:

multiplying means for multiplying predetermined coefficients with said first comparison-result data; and

means for producing the second-comparison result data using the outputs of the multiplying means.